

We claim:

1. An apparatus for cleaning cooling tower basins comprising a carriage having a base plate for mounting operating components of the apparatus, a pair of wheels fitted to one end of the carriage for maneuvering the apparatus into position adjacent to a cooling tower basin, an extensible handle fitted to the other end of the carriage for extension to provide leverage in tilting the carriage for movement, a stand depending from the other end of the carriage for level positioning the carriage, a drive motor affixed to the base plate adjacent the one end of the carriage, the drive motor having a drive shaft and having a front face, a pump mounting cage affixed to the motor front face, a centrifugal pump affixed to the cage, the pump having an axial shaft connected to the motor drive shaft so that the motor drives the pump, the pump having an axial inlet manifold and a tangential outlet manifold, a strainer housing defining a strainer chamber, the strainer housing having an outlet connection affixed to the pump inlet manifold, the strainer housing further having an inlet connection, a strainer positioned in the strainer chamber for straining water and debris passing through the housing, a discharge pipe defining a passage from the pump outlet manifold to a discharge connection from the apparatus, a discharge valve in the discharge pipe, a prime water connection fitted to the discharge pipe upstream of

the discharge valve, a prime water valve in the prime water connection so that the operating components including drive motor, cage, pump, strainer housing, and strainer are connected to each other as an integral unit with the unit being connected to the carriage base through the drive motor and that the apparatus is readily wheeled into position adjacent a cooling tower.

2. An apparatus as defined in claim 1 in which the centrifugal pump is self-priming.

3. An apparatus for cleaning cooling tower basins comprising a carriage having a base plate for mounting operating components of the apparatus, means fitted to one end of the carriage for maneuvering the apparatus into position adjacent to a cooling tower basin, means fitted to the other end of the carriage for tilting the carriage for movement into position adjacent a cooling tower basin, a drive motor affixed to the base plate adjacent the one end of the carriage, the drive motor having a drive shaft and having a front face, a pump mounting cage affixed to the motor front face, a centrifugal pump affixed to the cage and driven by the motor, the pump having an axial inlet manifold and a tangential outlet manifold, a strainer housing fixed to the pump inlet manifold and having a strainer for

straining water and debris passing through the housing, a discharge pipe defining a passage from the pump outlet manifold to a discharge connection from the apparatus, a discharge valve in the discharge pipe, a prime water connection fitted to the discharge pipe upstream of the discharge valve, and a prime water valve in the prime water connection for priming the pump.

4. An apparatus for cleaning cooling tower basins comprising a carriage having a base plate for mounting operating components of the apparatus, means fitted to one end of the carriage for maneuvering the apparatus into position adjacent to a cooling tower basin, an extensible handle fitted to the other end of the carriage for tilting the carriage for movement into position adjacent a cooling tower basin, a drive motor affixed to the base plate adjacent the one end of the carriage, the drive motor having a drive shaft and having a front face, a centrifugal pump affixed to the cage and driven by the motor, the pump having an axial inlet manifold and a tangential outlet manifold, a strainer housing having a strainer for straining water entering the pump, an inlet hose connecting the strainer housing to the basin, a water and debris collection tool fitted to the end of the collection hose, the tool being a hollow shell with a tubular portion for connection to the inlet hose, and an integral head with walls defining a depending skirt terminating

in a perimeter edge with spaced notches defining a plurality of portals for passage of water and sediment, a discharge pipe defining a passage from the pump outlet manifold to a discharge connection from the apparatus, a discharge valve in the discharge pipe, a prime water connection fitted to the discharge pipe upstream of the discharge valve, and a prime water valve in the prime water connection for priming the pump.

5. A method of cleaning recirculating water in a cooling tower basin utilizing an integrated portable machine including a mounting carriage, a motor driven centrifugal pump, a debris collecting tool fitted to the pump through a collection hose and through a strainer, a discharge line from the pump to drain, the discharge line having a discharge valve, a prime water and valve connection to the discharge line between the pump and the discharge valve comprising the steps of:

- a. adding make-up water to the cooling tower to compensate for water depleted from the tower during cleaning,
- b. shutting down the cooling tower to allow sediment to settle in the basin prior to cleaning,
- c. moving the machine into position adjacent a cooling tower basin,
- d. placing the debris collecting tool under water in the basin,

e. shutting the discharge valve,
f. opening the priming valve,
priming the discharge line, the pump, and the inlet hose up to
the collecting tool in the basin,

g. operating the pump,
h. opening the discharge valve,
i. closing the prime valve,
j. straining water and sediment flowing into the pump, and
k. evacuating sediment from the basin.

6. A method of cleaning recirculating water in a cooling tower
basin utilizing an integrated portable machine including a
mounting carriage, a motor driven centrifugal pump, a debris
collecting tool fitted to the pump through a collection hose and
through a strainer, a discharge line from the pump to drain, the
discharge line having a discharge valve, a prime water and valve
connection to the discharge line between the pump and the
discharge valve comprising the steps of:

- a. moving the machine into position adjacent a cooling
tower basin,
- b. placing the debris collecting tool under water in the
basin,
- c. shutting the discharge valve,

d. opening the priming valve,
priming the discharge line, the pump, and the inlet hose up to
the collecting tool in the basin,
e. operating the pump,
f. opening the discharge valve,
g. closing the prime valve,
h. straining water and sediment flowing into the pump,
i. evacuating sediment and water from the basin,
j. filtering water discharged from the basin, and
k. returning filtered water to the basin.

7. A tool for attachment to a vacuum hose for use in removing
water and sediment from a basin comprising a hollow shell with a
tubular portion for connection to the hose and an integral head
with walls in the general form of a prism, the tool head walls
defining a depending skirt with a perimeter edge having spaced
notches defining a plurality of portals for passage of water and
sediment from a basin into the tool head when vacuum is applied
to the hose.